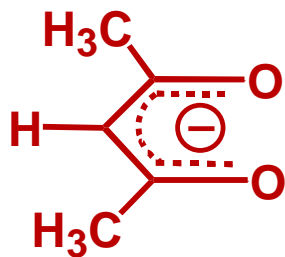
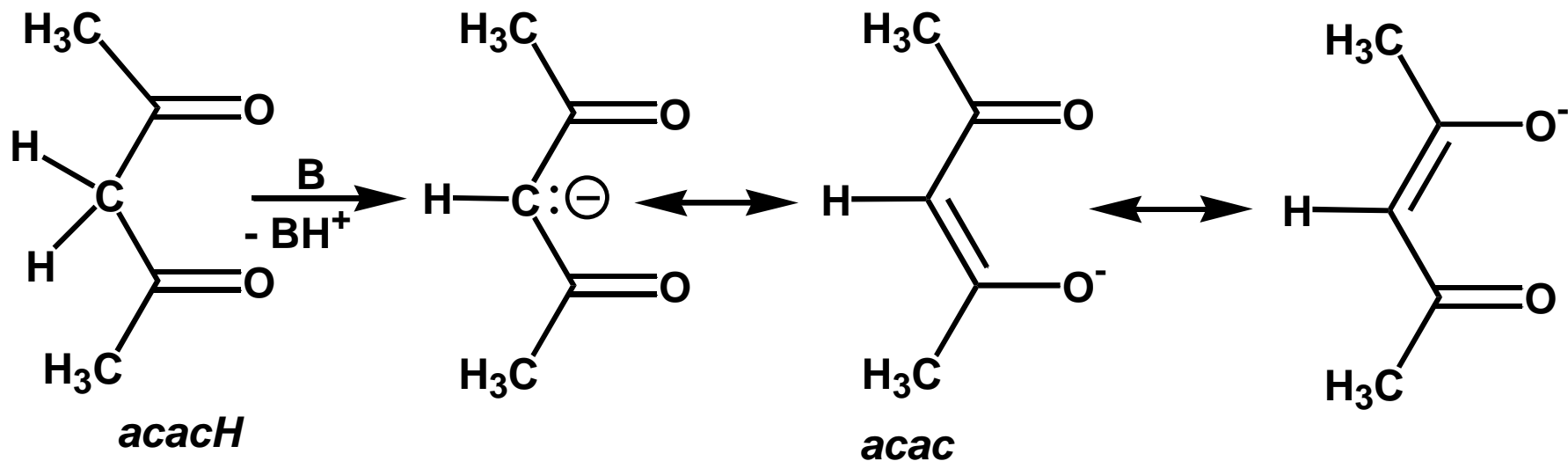


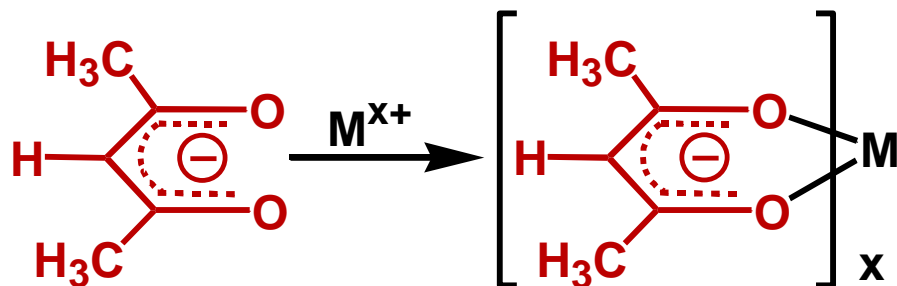
# ESPERIENZA 1

## Sintesi di acetilacetonato complessi di metalli di transizione della prima serie

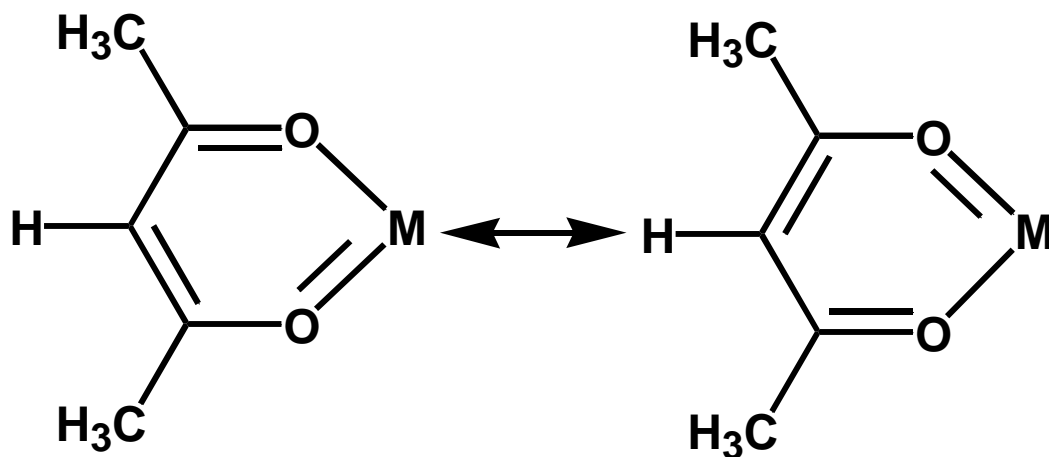
### Il comportamento acido/base del 2,4-pentandione



## La **coordinazione** dello ione acetilacetonato ai metalli di transizione



## Altre **forme di risonanza** dovute alla coordinazione



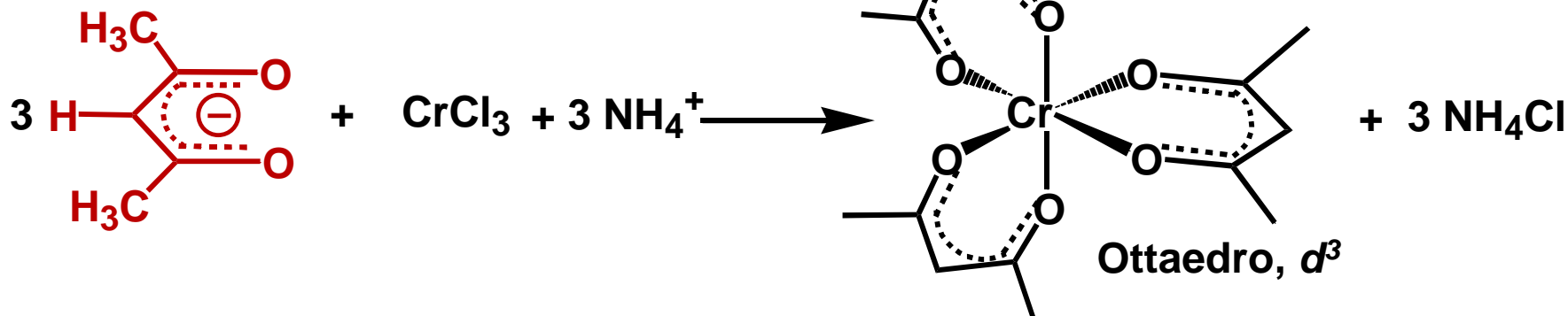
Distanze di legame a due a due **uguali**: M-O, C-O, C-C

# Sintesi di $[\text{Cr}(\text{acac})_3]$

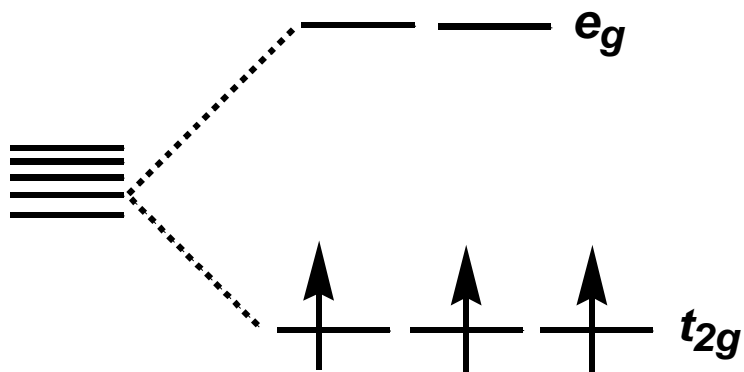
## Idrolisi dell'urea



## Sintesi del complesso

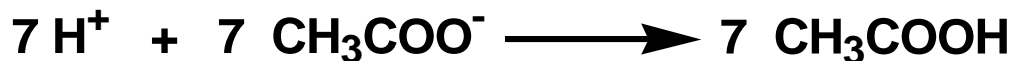
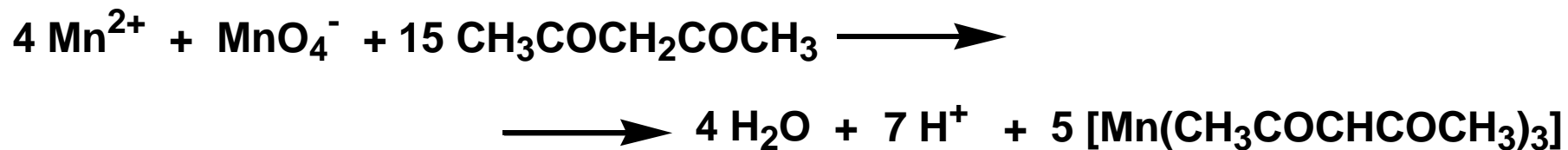
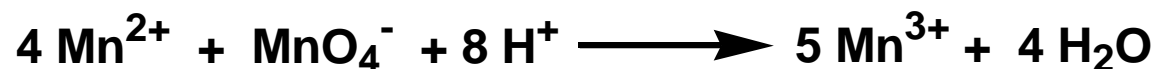


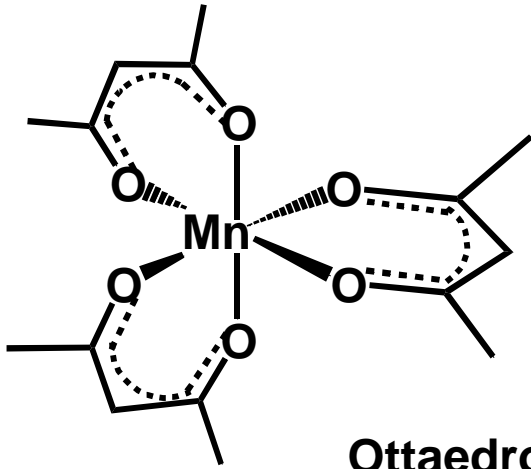
paramagnetico



## Sintesi di $[\text{Mn}(\text{acac})_3]$

### Sintesi del complesso



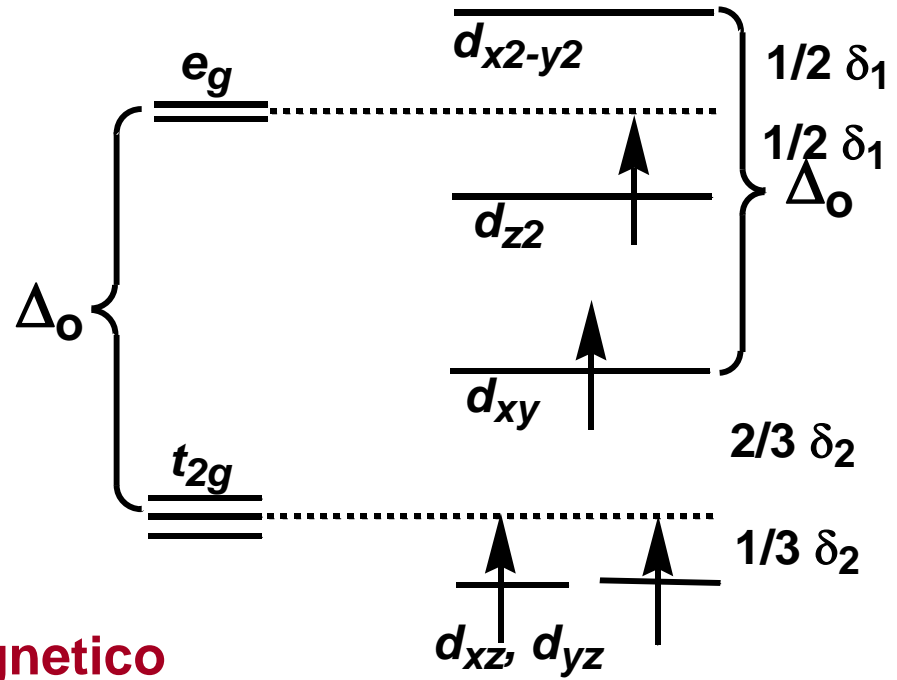
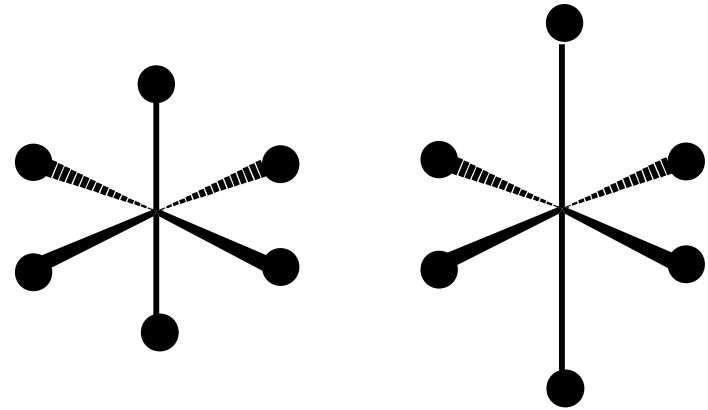


Ottaedro,  $d^4$

**Distorsioni per effetto Jahn-Teller:**

**Allungamento:** 2 Mn-O 2.12 Å;  
4 Mn-O 1.93 Å;

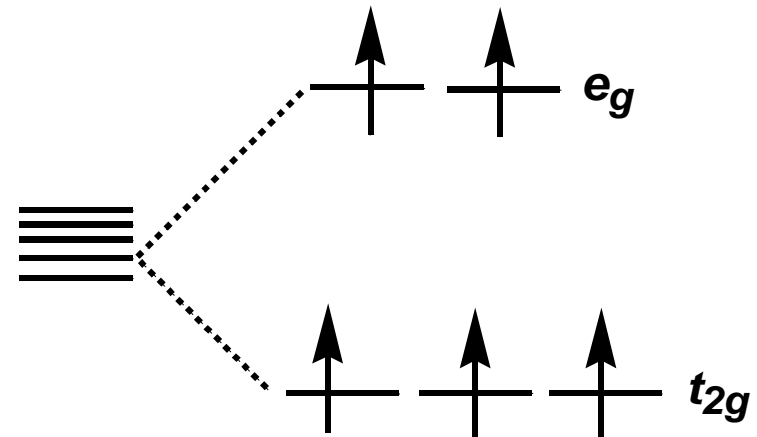
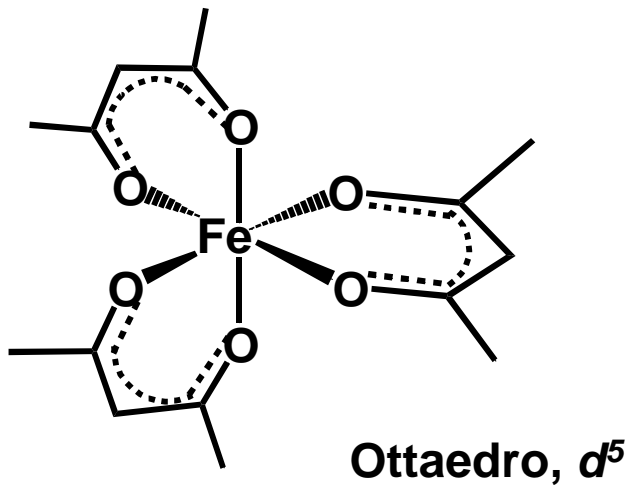
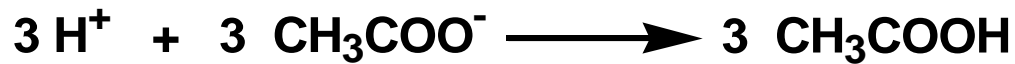
**Compressione:** 2 Mn-O 1.95 Å;  
4 Mn-O 2.00 Å.



**paramagnetico**

# Sintesi di $[\text{Fe}(\text{acac})_3]$

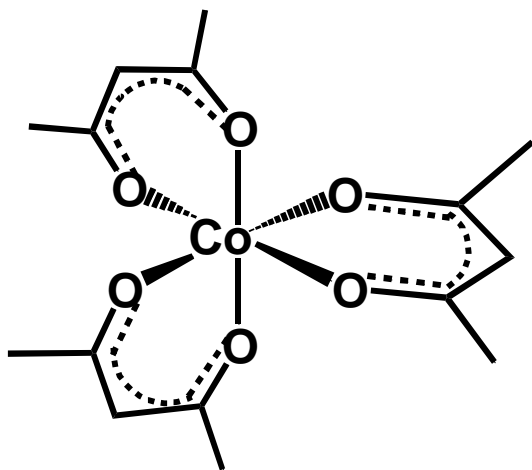
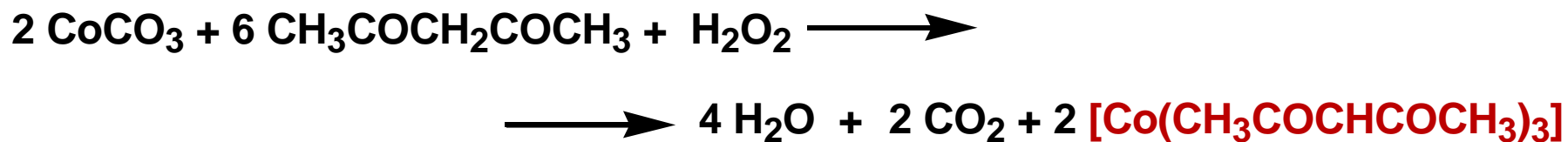
## Sintesi del complesso



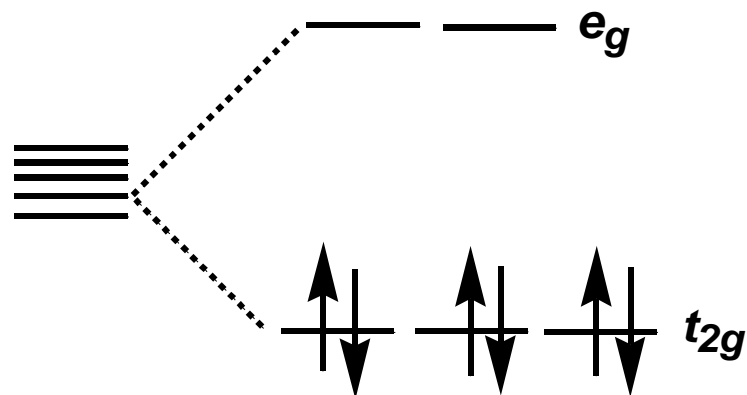
**paramagnetico**

## Sintesi di [Co(acac)<sub>3</sub>]

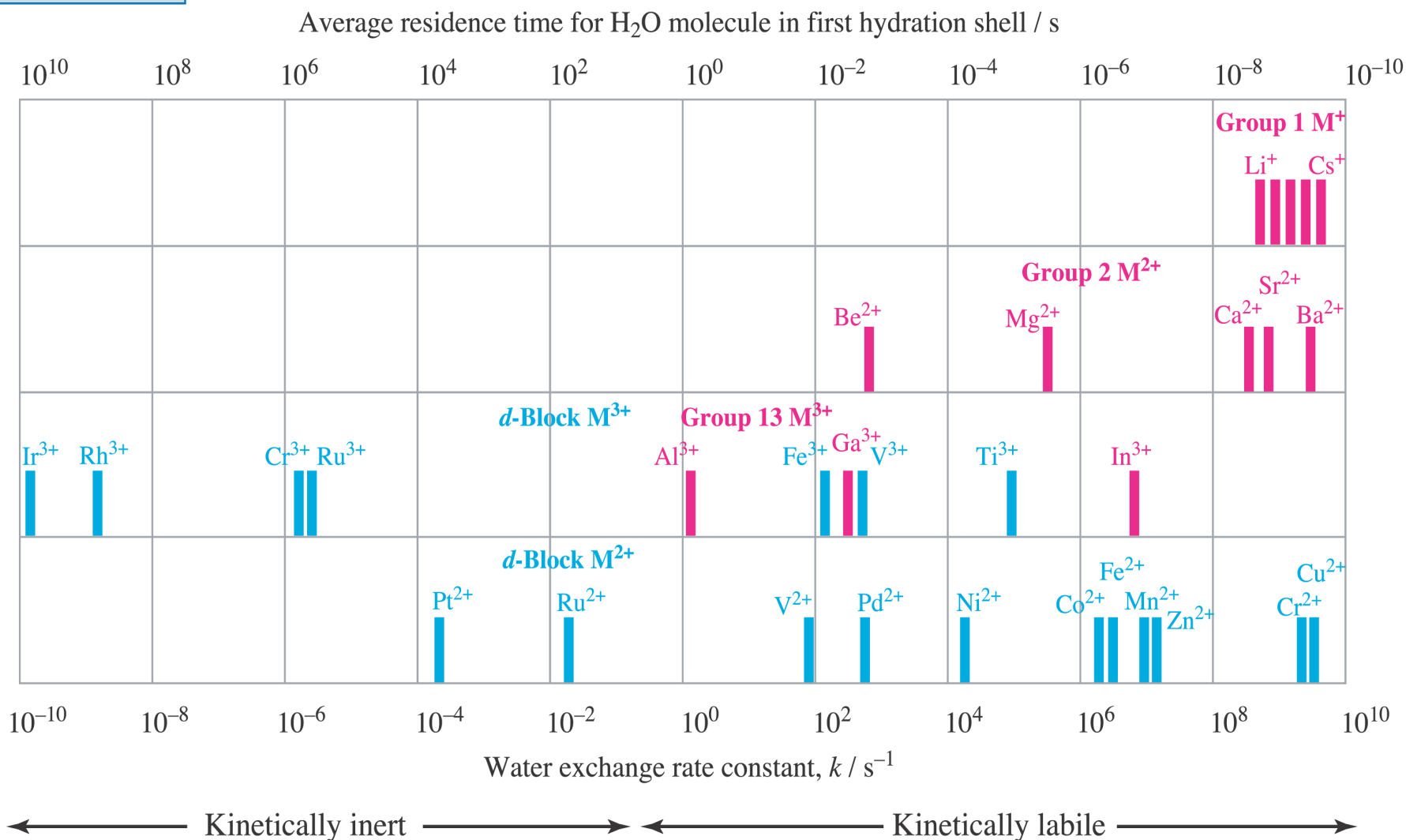
### Sintesi del complesso



Ottaedro,  $d^6$



**diamagnetico**

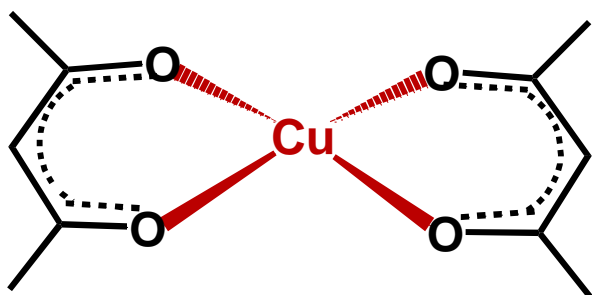
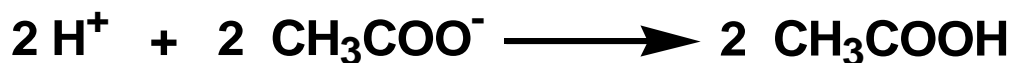
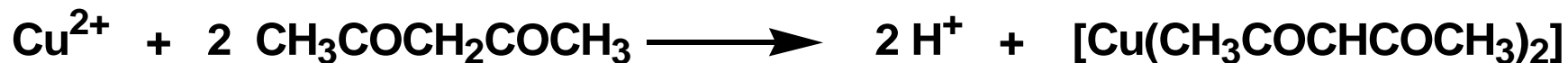


**Fig. 26.1** Water exchange rate constants and average residence times for water molecules in the first coordination sphere of aquated metal ions at 298 K. Group 1, 2 and 13 metal ions are shown in pink, and *d*-block metal ions in blue. [Based on S.F. Lincoln (2005) *Helv. Chim. Acta*, vol. 88, p. 523 (Figure 1).]

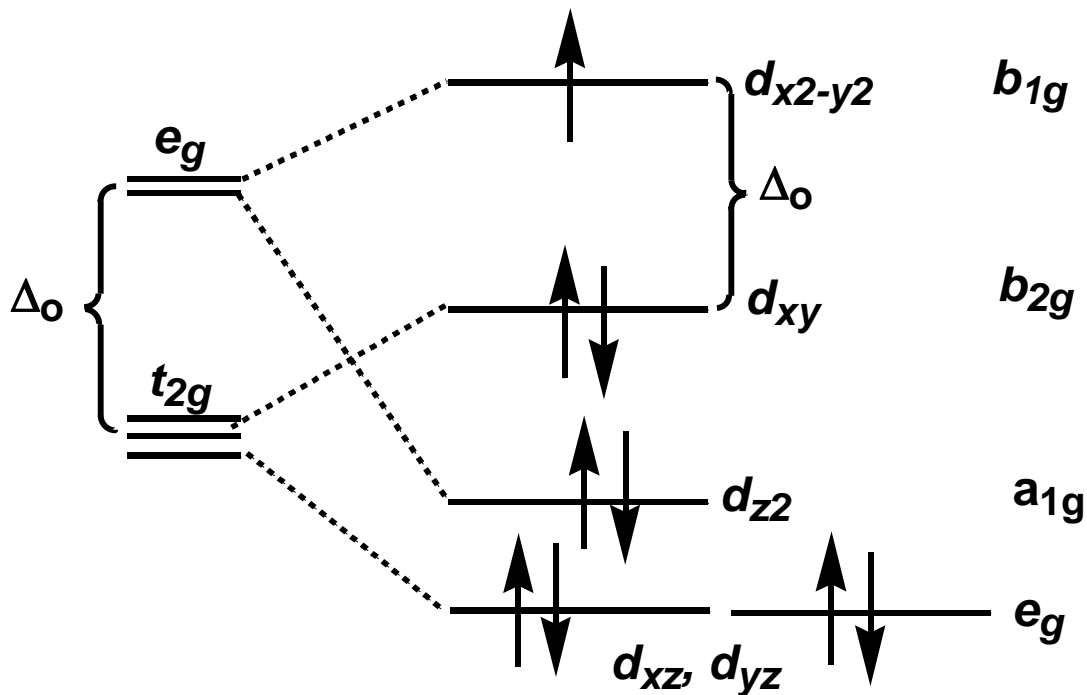


# Sintesi di $[\text{Cu}(\text{acac})_2]$

## Sintesi del complesso



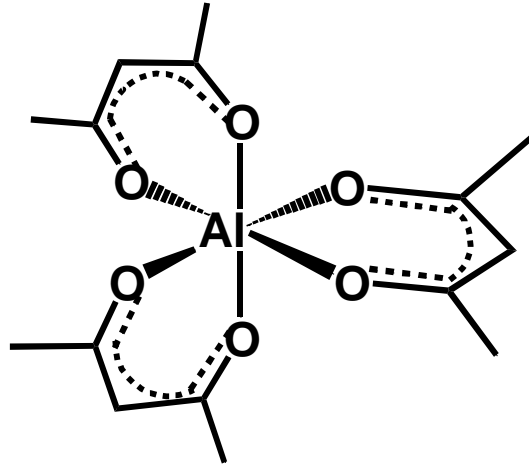
planare quadrato,  $d^9$



paramagnetico

## Sintesi di $[Al(acac)_3]$

### Sintesi del complesso



ottaedro, **no elettroni *d***

**diamagnetico**